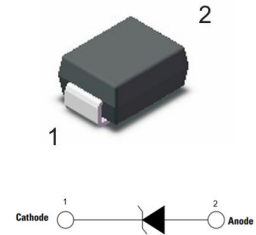


Features

- ◆ Low profile package
- ◆ Ideal for automated placement
- ◆ Low forward voltage drop
- ◆ Low leakage current
- ◆ High forward surge capability
- ◆ Meets MSL level 1, per J-STD-020,
- ◆ Plastic package has underwriters laboratory flammability 94V-0
- ◆ Polarity: color band denotes cathode end



Applications

- ◆ Low voltage high frequency inverters
- ◆ DC/DC converters
- ◆ Freewheeling
- ◆ Polarity protection applications

Dimensions (DO-214AA/SMB)

Ref.	Millimeters		Inches	
	Min	Max	Min.	Max.
A	1.850	2.200	0.072	0.086
B	4.060	4.650	0.160	0.183
C	3.300	3.940	0.130	0.155
D	2.050	2.440	0.080	0.096
E	0.760	1.520	0.030	0.060
F	-	0.203	-	0.008
G	5.050	5.590	0.198	0.220
H	0.152	0.305	0.006	0.012
I	2.260	-	0.089	-
J	2.160	-	0.085	-
K	-	2.740	-	0.107

Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	SS52B	SS54B	SS56B	SS58B	SS510B	SS512B	SS515B	SS520B	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	20	40	60	80	100	120	150	200	V
Maximum RMS voltage	V _{RMS}	14	28	42	56	70	84	105	140	V
Maximum DC blocking voltage	V _{DC}	20	40	60	80	100	120	150	200	V
Maximum average forward rectified current	I _{F(AV)}	5.0								A
Maximum instantaneous forward voltage at 5.0A	V _F	0.55		0.70	0.85					V
Maximum DC reverse current at rated DC blocking voltage	I _{R@25°C}	1.0		0.3					mA	
	I _{R@100°C}	50		25						
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I _{FSM}	150								A
Typical junction capacitance (Note 1)	C _J	500		300					PF	
Typical thermal resistance (Note 2)	R _{θJA}	50								°C/W
Operating junction temperature range	T _J	-55 to +125								°C
Storage temperature range	T _{STG}	-55 to +150								°C

Notes: 1.Measured at 1MHz and applied reverse voltage of 4 V D.C.

2.P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

Ratings and Characteristics Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

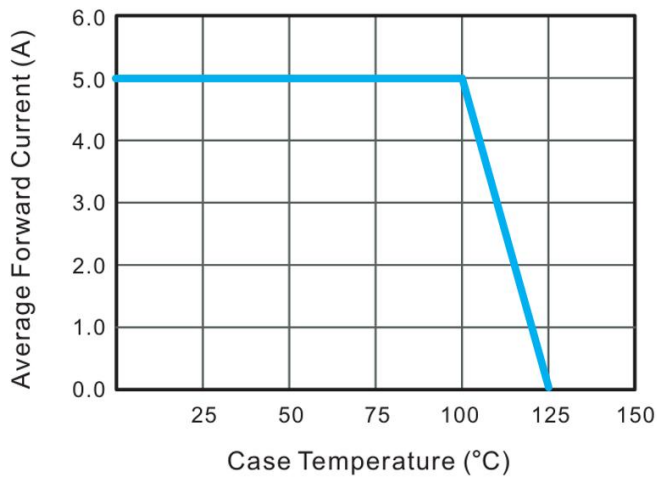


Figure 2. Typical Reverse Characteristics

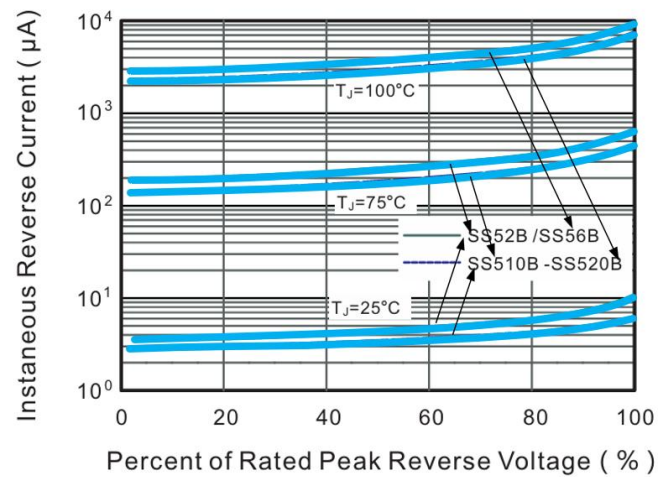


Figure 3. Typical Forward Characteristics

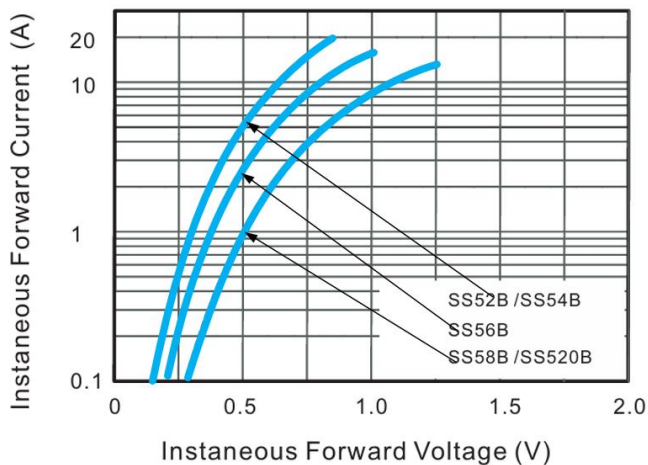


Figure 4. Typical Junction Capacitance

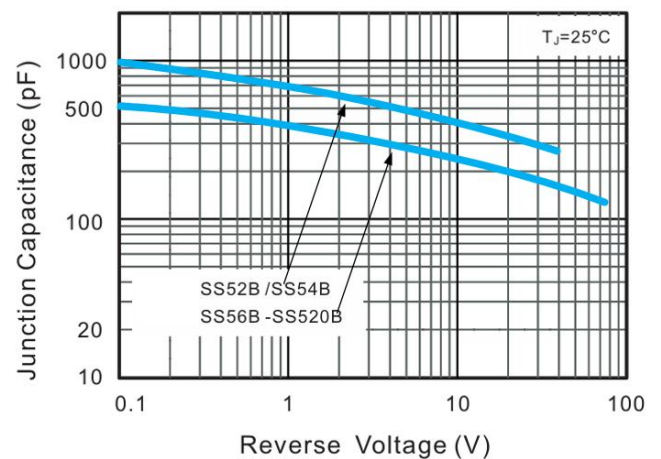


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current

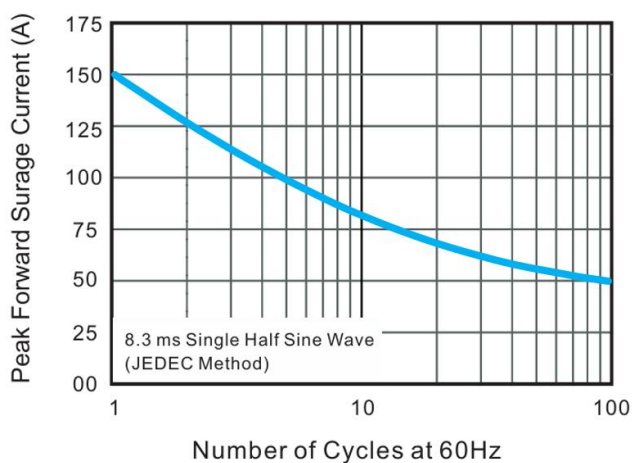
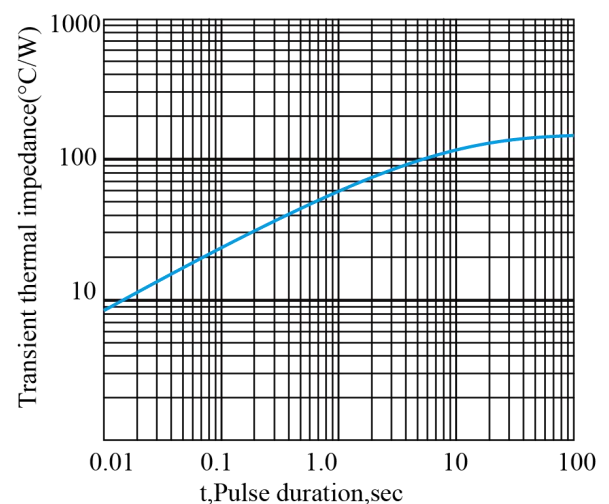
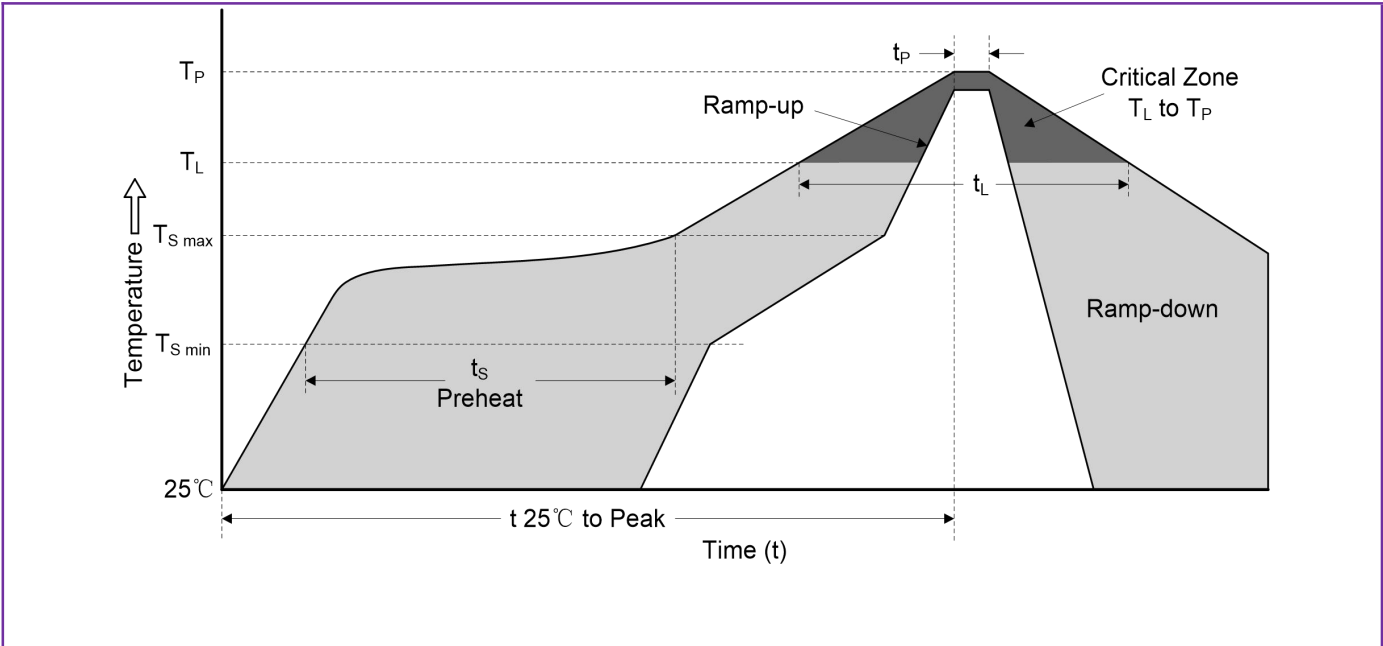


Figure 6. Typical Transient Thermal Impedance



Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min ($T_{S\ min}$)	150°C
	-Temperature Max ($T_{S\ max}$)	200°C
	-Time (min to max) (t_s)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3°C/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3°C/second max.
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)°C
Time within 5°C of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to Peak Temperature(T_P)		8 minutes max.
Do not exceed		260°C